Listing of Claims

1. (Currently Amended) An image converting apparatus, comprising:

a divider which divides a 24-bit color image into respective 8-bit RGB values per pixel;

a comparator which judges which one of the colors corresponding to the RGB ~~colors~~ values has a comparatively greater specific gravity;

a shifter which shifts each of the 8-bit RGB values in order to allocate at least one extra bit to the color having the comparatively greater specific gravity; and

a combiner which generates a 16-bit image by combining the shifted RGB values.

2. (Original) The apparatus of claim 1, wherein the shifter shifts the 8-bit RGB values so that 6 bits are output to the combiner for the color having the comparatively greater specific gravity.

3. (Original) The apparatus of claim 1, wherein the shifter allocates 5 bits to the colors having a comparatively less specific gravity respectively.

4. (Original) The apparatus of claim 1, wherein the shifter shifts the RGB values so that the at least one extra bit is allocated to the R value when R has a comparatively greater specific value.

5. (Original) The apparatus of claim 1, wherein the shifter shifts the 8-bit R value by 2 bits and outputs the remaining 6 R bits to the combiner, shifts the 8-bit G value by 3 bits and outputs the remaining 5 G bits to the combiner, and shifts the 8-bit B value by 3 bits and outputs the remaining 5 B bits to the combiner.

6. (Original) The apparatus of claim 1, wherein the shifter generates the RGB values to produce a bit ratio of 6:5:5 for each pixel in the 16-bit image.

7. (Original) The apparatus of claim 1, wherein the shifter allocates the at least one extra bit to the G value when G has the comparatively greater specific gravity.

8. (Original) The apparatus of claim 1, wherein the shifter shifts the 8-bit R value by 3bits and outputs the remaining 5 R bits to the combiner, shifts the 8-bit G value by 2 bits and outputs the remaining 6 G bits to the combiner, and shifts the 8-bit B value by 3 bits and outputs the remaining 5 B bits to the combiner.

9. (Original) The apparatus of claim 1, wherein the shifter generates the RGB values to produce a bit ratio of 5:6:5 for each pixel in the 16-bit image.

10. (Original) The apparatus of claim 1, wherein the shifter allocates the at least one extra bit to the B value when B has the comparatively greater specific gravity.

11. (Original) The apparatus of claim 1, wherein the shifter shifts the 8-bit R value by 3 bits and outputs the remaining 5 R bits to the combiner, shifts the G value by 3 bits and outputs the remaining 5 G bits to the combiner, and shifts the B value by 2 bits and outputs the remaining 6 B bits to the combiner.

12. (Original) The apparatus of claim 1, wherein the shifter generates the RGB values to produce a bit ratio of 5:5:6 for each pixel in the 16-bit image.

13. (Currently Amended) An image converting method, comprising:

dividing a color image into first RGB color values;

judging which of the first RGB ~~colors~~ color values in the color image has a comparatively greater specific gravity;

generating second RGB color values from the first RGB color values, said generating step including allocating at least one extra bit to the color having the comparatively greater specific gravity; and

combining the second RGB color values for each pixel to form a converted color image.

14. (Original) The method of claim 13, wherein the judging step includes:

calculating the first RGB color values by pixels or calculating the first RGB color values of the whole color image.

15. (Original) The method of claim 13, wherein the allocating step includes:

allocating 6 bits including the extra bit to represent the color having the comparatively greater specific gravity; and

allocating 5 bits to represent each of the other colors.

16. (Original) The method of claim 13, wherein the allocating step further includes: allocating the at least one extra bit to the second R value when R has the comparatively greater specific gravity.

17. (Original) The method of claim 13, wherein the allocating step further includes: allocating the at least one extra bit to the second G value when G has the comparatively greater specific gravity.

18. (Original) The method of claim 13, wherein the allocating step further includes: allocating the at least one extra bit to the second B value when B has the comparatively greater specific gravity.

19. (Original) The method of claim 13, wherein the first RGB color values are of M-bit size and the second RGB color values have a bit size smaller than M.

20. (Currently Amended) An image conversion method, comprising:

~~determining which of a plurality of colors in an M bit-size image has a predetermined specific gravity; and~~

converting [[the]] an M bit-size image into an N bit-size image ~~based on a result of the determining step,~~ wherein M > N~~U~~, said converting including for each pixel in the M bit-size image (a) generating first RGB values, (b) determining which of the first RGB values has a greater specific gravity, (c) converting the first RGB values into second RGB values each with lesser bit size, the second RGB value with the greater specific gravity allocated with at least one extra bit than the remaining second RGB values, and (d) combining the second RGB values to form the N bit-size image.

21. (Original) The method of claim 20, wherein the predetermined specific gravity is a largest specific gravity of the plurality of colors in the M bit-size image.

22. (Canceled)

23. (Currently Amended) The method of claim 21, wherein ~~converting~~ generating the first RGB values ~~into the second RGB values~~ includes:

allocating a first number of bits to represent the second RGB value corresponding to the color having the predetermined specific gravity; and

allocating a second number of bits to represent the RGB values corresponding to remaining ones of the colors, where the first number of bits and the second number of bits are different.

24. (Currently Amended) The method of claim 23, wherein the first number [[is]] of bits is greater than the second number of bits.

25. (Original) The method of claim 21, wherein M=24 and N=16.

26. (Original) The method of claim 23, wherein M=24, N=16, the first number of bits is 6 and the second number of bits is 5.

27. (Currently Amended) An image conversion method, comprising:

dividing a first image into first RGB values per pixel;

determining, for each pixel, which of the first RGB values ~~colors in the first image~~ has a greater specific gravity;

converting the first RGB values into second RGB color values based on the color with the greater specific gravity, the second RGB values having different numbers of bits than the first RGB values respectively; and

forming a second image based on the second RGB values.

28. (Original) The method of claim 27, wherein the converting step includes:

allocating a first number of bits to represent the second RGB value corresponding to the color having the greater specific gravity; and

allocating a second number of bits to represent the RGB values corresponding to remaining ones of the colors, where the first number of bits and the second number of bits are different.

29. (Currently Amended) The method of claim 28, wherein the first number [[is]] of bits is greater than the second number of bits.

30. (Original) The method of claim 27, wherein the first image is an M-bit image and the second image is an N-bit image, where M > N.

31. (Original) The method of claim 30, wherein M=24 and N=16.

32. (Original) The method of claim 29, wherein the first image is an M-bit image and the second image is an N-bit image, where M > N.

33. (Original) The method of 32, wherein the first number is 6 and the second number is 5.

34. (Currently Amended) An image conversion apparatus, comprising:

a divider which divides a first image into first RGB values per pixel;

a comparator that determines, for each pixel, which of the first RGB ~~colors~~ values has a greater specific gravity;

a converter which converts the first RGB values into second RGB color values based on the color with the greater specific gravity; and

a combiner which forms a second image based on the second RGB values.

35. (Original) The apparatus of claim 34, wherein the converter allocates a first number of bits to represent the second RGB value corresponding to the color having the greater specific gravity and allocates a second number of bits to represent the RGB values corresponding to remaining ones of the colors, where the first number of bits and the second number of bits are different.

36. (Currently Amended) The apparatus of claim 35, wherein the first number [[is]] of bits is greater than the second number of bits.

37. (Original) The apparatus of claim 34, wherein the first image is an M-bit image and the second image is an N-bit image, where M > N.

38. (Original) The apparatus of claim 37, wherein M=24 and N=16.

39. (Original) The apparatus of claim 36, wherein the first image is an M-bit image and the second image is an N-bit image, where M > N.

40. (Original) The apparatus of claim 39, wherein the first number is 6 and the second number is 5.

41. (New) The apparatus of claim 1, wherein the shifter shifts the RGB values to allocate a same number of extra bits irrespective of which one of the colors is judged to have the greater specific gravity.

42. (New) The apparatus of claim 1, wherein the comparator:

determines a scale position for each of the RGB values;

compares the scale positions of the RGB values; and

judges which one of the RGB values has the greater specific gravity based on a result of the comparison of scale positions.

43. (New) The apparatus of claim 42, wherein the comparator selects an RGB value having the largest scale position as the one having the greater specific gravity.

44. (New) The apparatus of claim 42, wherein the scale positions are equivalent grayscale positions for a respective one of the RGB colors.

45. (New) The method of claim 13, wherein generating the second RGB color values includes allocating a same number of extra bits irrespective of which one of the first RGB color values is judged to have the greater specific gravity.

46. (New) The method of claim 13, wherein judging includes:

determining a scale position for each of the first RGB color values;

comparing the scale positions of the first RGB color values to one another; and

determining which one of the first RGB color values has the greater specific gravity based on a result of the comparison of scale positions.

47. (New) The method of claim 46, wherein the comparator selects one of the first RGB color value having the largest scale position as the one having the greater specific gravity.

48. (New) The method of claim 46, wherein the scale positions are equivalent grayscale positions for a respective one of the RGB colors.

49. (New) The method of claim 20, wherein converting includes:

generating the second RGB values for each pixel so as to allocate a same number of extra bits irrespective of which one of the RGB value has the predetermined specific gravity.

50. (New) The method of claim 27, wherein converting includes:

allocating a same number of extra bits to the color value in the second RGB color values having the greater specific gravity, irrespective of which one of the first RGB color values has the greater specific gravity.

51. (New) The method of claim 27, wherein determining includes:

determining a scale position for each of the first RGB color values;

comparing the scale positions of the first RGB color values; and

judging which one of the first RGB values has the greater specific gravity based on a result of the comparison of scale positions.

52. (New) The method of claim 51, further comprising:

selecting the first RGB color value having the largest scale position as the one having the greater specific gravity.

53. (New) The method of claim 51, wherein the scale positions are equivalent grayscale positions for a respective one of the RGB colors.

54. (New) The apparatus of claim 34, wherein the converter shifts the first RGB values to allocate a same number of extra bits in the second RGB values for the color having the greater specific gravity, irrespective of which one of the colors is judged to have the greater specific gravity.

55. (New) The apparatus of claim 1, wherein the comparator:

determines a scale position for each of the first RGB values;

compares the scale positions of the first RGB values to one another; and

judges which one of the first RGB values has the greater specific gravity based on a result of the comparison of scale positions.

56. (New) The apparatus of claim 55, wherein the comparator selects a first RGB value having the largest scale position as the one having the greater specific gravity.

57. (New) The apparatus of claim 55, wherein the scale positions are equivalent grayscale positions for a respective one of the RGB colors.